JOINT INTEROPERABILITY & ENGINEERING ORGANIZATION

CENTER FOR SOFTWARE

Management Plan MP

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SOFTWARE CENTER OPERATOR MANUAL (SCOM)

FOR THE

AIRFIELDS SYSTEM

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(D R A F T)

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ACKNOWLEDGEMENT

This document was prepared for the Defense Information Systems Agency (DISA), Joint Interoperability and Engineering Organization (JIEO), Center for Software (JEX), Software Development Department (JEXA), General Applications Division (JEXAG).

This Software Center Operator Manual (SCOM) provides personnel in the computer center or centralized or networked software installation information on how to install and operate the Airfields system.

Any questions, comments, or considerations relative to this Software Center Operator Manual (SCOM) should be directed to the following:

Global Command and Control System (GCCS) Hotline
DSN: 653-8681
Commercial: (703) 735-8681

CONTENTS

SECTION 1. SCOPE

1.1 Identification . The Airfields system provides the Worldwide Military Command and Control System (WWMCCS) community with a wide range of data about free world airfields. All data is supplied by the Defense Mapping Agency Aerospace Center (DMAAC) and is updated monthly. The Airfields Retrieval system has been identified as a Global Command and Control Migration System and was re-engineered from COBOL to the Ada 95 programming language. It provides the capability to print the One-Line, One-Page Summary, Multi-Page, Selective Data Retrieval, and Turnaround reports both on- and off-line.

1.2 System Overview . The functional proponent for Airfields is the Joint Staff's Logistics Directorate (J4). The office of primary responsibility (OPR) is the Operations Planning Division of the Joint Interoperability and Engineering Organization (JIEO). The designated development Agency (DDA) is the Center for Software (JEX), Software Development Department (JEXA), General Applications Division (JEXAG).

The Airfields System has been in existence for approximately twenty years. In the mid to late 1980's, the Defense Mapping Agency Aerospace Center (DMAAC) changed the database format which resulted in the need to do a total redesign of the WWMCCS version of the system from COBOL 68 to COBOL 74. During that period, the access method changed also from Honeywell Indexed Sequential Processing (ISP) files to a flat file format.

Historically, WWMCCS users access the system approximately 100 times per month. The database is owned by the Defense Mapping Agency Aerospace Center (DMAAC) and contains data on approximately 44,000 airfields and consists of over one million records.

As stated above. the Airfields database is a flat file database that is currently resident on the Worldwide Military Command and Control Systems (WWMCCS) Honeywell mainframe. Recently, reverse engineering was used to re-host the database using the Relational Database Management System (RDBMS) in the Oracle Standard Query Language (SQL). Open Database Connectivity (ODBC) software was utilized as an interface between the application and the database. The system runs under a Sun Solaris 2.3 operating environment. A commercial-off-the-shelf (COTS) Graphical User Interface known as Screen Machine, is utilized at the front end of the system.

The system complies with GCCS Integration Standards and employs many standards such as the windowing capability and an extensive Help facility to aid the user with system operation. The primary operational sites will include the Global Command and Control System (GCCS) community and the Joint Staff.

1.3 Document Overview . The purpose of the Software Center Operator Manual (SCOM) is to provide personnel in the computer center and/or centralized/networked software installation the information needed to operate the Airfields System in GCCS' Common Operating Environment (COE).

2. REFERENCED DOCUMENTS

a. Department of Defense, Military Standard Software Development and Documentation , MIL-STD-498, 5 Dec 1994

b. Data Item Description (DID) number DI-IPSC-81443, Software User Manual (SUM) , 5 Dec 1994

c. Joint Interoperability & Engineering Organization (JIEO), Washington, DC, Software Development Plan (SDP) , (Draft) 20 January 1995

d. Joint Interoperability & Engineering Organization (JIEO), Washington, DC, Software Requirements Specification (SRS) (Draft), 20 January 1995

3. **SOFTWARE SUMMARY**

3.1 Software Application . The Airfields system software provides the Joint Staff and the GCCS community in general with a wide range of data about airfields throughout the world. The data, which is supplied by the Defense Mapping Agency Aerospace center (DMAAC), will be used as a crisis management tool in the event of national emergencies or world crises and allows the contingency planner quick access to information such as airport capacity, runway availability, throughput calculation, etc.

3.2 Software Inventory . The following are software files, database(s), data tables, etc. which must be installed in order for the software to operate:

Oracle Version 7.1	-	Unclassified
Open Database Connectivity (ODBC) Version 2.0	-	Unclassified
Solaris 2.3	-	Unclassified
GNAT Compiler (Ada 95) Version 2.05	-	Unclassified
Airfields Executables	-	Unclassified
Oracle Database Creation Scripts	-	Unclassified
Airfields Database Tables	-	Secret/NOFORN

3.2.1 Application Files . Appendix A identifies package bodies and package specifications used in the development of the system. Each package body and package specification name is followed by an explanation of what the package body or package specification does. The uppercase element name followed by a dot extension represents the external file name. The name immediately following the double dashes "--" represents the internal package body or package specification name.

3.2.2. Database Tables . Appendix B contains a list of each table and the corresponding primary key(s) associated with that table. Appendix C represents the Airfields database tables and descriptions. The element type and size, the AAFIF identification number, and the element name are defined in this section. Airport table is the parent table to all U.S. airfields and Oconus_airport is the table which contains all the information on foreign airfields.

3.3 Software Environment . The Airfields will be installed on a SunSparc workstation in the GCCS Common Operating Environment (COE). It runs under Sun Solaris 2.3 and database manipulations are handled via the Oracle Standard Query Language (SQL). Sequel Loader, an Oracle utility, is used to load the migrate tables. An Open Database Connectivity package is utilized to link the application with the database. Screen Machine, a Graphical User Interface (GUI), is used at the front end of the system. This tool is a Windows/MOTIF compliant GUI development tool which is compatible with the Ada 95 language and Ada 95 compilers.

A minimum configuration includes one SunSparc 1000 computer with approximately 1 gigabit of memory available to install and run the Airfields system. An on-line printer that prints up to 132 characters per line is required in order to print the reports produced by the system. Some printers may require 8.5 x 11 bond paper. As stated above, other software that must be present includes the Sun Solaris 2.3 Operating System, an Oracle Relational Database Management System (RDBMS), all applicable data files, the Airfields executable, all database tables and scripts, and the Sequel Loader utility to load the migrate tables.

3.4 Software Organization and Overview of Operation . The Airfields system operates in a Windows/MOTIF environment. A front end driver, Screen Machine (a Graphical User Interface (GUI)), allows the user to execute the system by pointing and clicking on the desired function. All reports, with the exception of the Multi-Page Report, can be displayed onto computer screen. All reports in the system can be output to hard copy report.

3.4.1 Contents of Reports . Each report produced by the Airfields system allows the user the capability to determine which airfield(s) will be retrieved based upon input parameters on the selection screens. Users are advised to use limiting criteria when requesting large volumes of data since excessively large amounts of data may cause the system to crash. Some reports in the system are classified, therefore, users are encouraged to control classified data and reports properly. Users are also required to possess at minimum a current SECRET Security Clearance and should have the need-to-know to access classified data within the system. Contact the GCCS ADP Security Officer should questions arise concerning the handling of classified information. The following are descriptions of the retrieval capabilities in the system:

a. The One-Line Report produces a pre-formatted one line summary of information on airfields using a retrieval method specified by the user. Retrieve methods include country code, Airfield name, Basic Encyclopedia (BE) number, ICAO/FAA code, GEOLOC code, and Coordinate/Radius. These reports may be displayed to computer screen or a hardcopy report may be

obtained. When all airfields in a country are requested, the number of report screens can be excessively large and cumbersome.

b. The One-Page Summary Report produces a one page hardcopy summary for each airfield selected. The report may also be displayed to computer screen or a hardcopy version may be obtained. The retrieval method (country code, Airfield Name, Basic Encyclopedia number, ICAO/FAA Code, GEOLOC, and Coordinate/Radius) and additional selection criteria (e.g., runway length, load class number, etc.) are specified by the user. The user should be cautioned that when all airfields in a country are requested, the number of report screens can be excessively large and cumbersome.

c. The Multi-Page Retrieval produces a hardcopy report on each airfield selected. This information provides all the information in the database for each selected airfield. Because of the volume of data provided on each non-CONUS airfield, users are advised to limit the selection criteria for this report. CONUS airfields contain limited data and provide very limited reports. Response and processing time can range from a few seconds to a few minutes, depending on the amount of data requested.

d. The Selective Data Retrieval provides information only on those data items requested by the user. The user should be cautioned that building an excessively large report can result in the number of report screens being large and cumbersome and, on occasion, may result in a system crash. Response and processing time can range from a few seconds to a few minutes, depending on the amount of data requested.

e. The Turnaround Calculation determines a theoretical turnaround of user-specified aircraft through an airfield based on the downtime required for that aircraft and the parking space available at the airfield. Response and processing time can range from a few seconds to a few minutes depending on the data being requested.

3.5 Contingencies and Alternate Sites and Modes of Operation . In order to access the system, users must have access to the primary GCCS site. It is possible that an alternate GCCS site will be established that will be utilized in the event of a national emergency. For information regarding this, contact the GCCS System Administrator or GCCS ADP Security personnel.

3.6 Security and Privacy . The database is classified Secret/No Foreign Dissemination (SNF). On-line reports from the retrieval system are marked with the highest classification of data actually

reported. Continental U.S.A. (CONUS) data is unclassified. All other airfields can be classified up to SNF. Users who access and use the system should possess at least a SECRET security clearance and should have the need-to-know for the data being accessed. Users are further advised to control all classified reports properly and to contact the GCCS ADP Security Office should questions concerning ADP security arise.

3.7 Assistance and Problem Reporting . Access to the GCCS can be arranged by the GCCS designated point of contact or the GCCS System Administrator. Questions regarding access to the Airfields System, running the system, or system data can be directed to the DISA Operations Planning Division of the Software Development Department. Users with problems are requested to use a Deficiency Reporting (DR) form when reporting problems. When reporting problems via telephone, users are requested to provide the type of information requested on the DR form to Airfields personnel. Listed below is the business address and phone number of the Airfields office of primary responsibility:

DISA/JIEO
Center for Software
Operations Planning Division
5600 Columbia Pike
Falls Church, Virginia 22041

Phone (DSN): 761-2599
(Commercial): (703) 681-2599

4. **INSTALLATION AND SETUP** The Software Center Operator is not responsible for installing and/or setting up the Airfields system. This will be accomplished jointly by the GCCS Systems Administrator and Software Development Department personnel.

5. **DESCRIPTION OF RUNS**

5.1 Run Inventory . This system does not require computer operator intervention to run, therefore, this section is not applicable.

5.2 Phasing . This system does not require computer operator intervention to run, therefore, this section is not applicable.

5.3 Diagnostic Procedures . This system does not require computer operator intervention to run, therefore, this section is not applicable.

5.4 Error Messages . Appendix D contains a list of system related error and informational messages associated with the system.

6. **NOTES**

6.1 Terms and Abbreviations

CFSW	Center for Software
COBOL	Common Business Oriented Language
COE	Common Operating Environment
DBMS	Data Base Management System
DDA	Designated Development Agency
DIA	Defense Intelligence Agency
DID	Data Item Description
DISA	Defense Information Systems Agency
DMAAC	Defense Mapping Agency Aerospace Center
DoD	Department of Defense
DR	Deficiency Report
FAA	Federal Aviation Aeronautics
GCCS	Global Command and Control Systems
GUI	Graphical User Interface
JDSSC	Joint Data Systems Support Center
JIEO	Joint Interoperability & Engineering Organization
NOFORN	No Foreign [dissemination]
OPR	Office of Primary Responsibility
OS	Operating System
RDBMS	Relational Database Management System
SNF	Secret/No Foreign [dissemination]
STD	Standard
SUM	Software Users Manual
WWMCCS	Worldwide Military Command and Control Systems

APPENDIX A

APPLICATION FILES

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NOTE: COPY UPDATED VERSION FROM THE SOFTWARE USER MANUAL LOCATED AT C:\DOCUMENT\AIRFIELD.SUM)

APPENDIX B

DATABASE PRIMARY KEYS

```
TABLE AIRPORT
 (PRIMARY KEY  WRLD_AREA_CD, INS_NUM_ID)

TABLE OCONUS_AIRPORT
   (PRIMARY KEY  WRLD_AREA_CD, INS_NUM_ID)

TABLE AFCT_BUNKER
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE APRON
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

CREATE TABLE AP_SCTY_CLSN
 (PRIMARY KEY (AAFIF_CD, WRLD_AREA_CD, INS_NUM_ID)

TABLE ARREST_SYS
  (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE COUNTRY
   PRIMARY KEY (CY_CD)

TABLE DEFUELING
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE FUEL_DISPENSING
  (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE FUEL_STOCK
 (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE FUEL_STORAGE
 (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE HANGARS
 (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE HARDSTAND
 (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

 TABLE MIGRATE
  (PRIMARY KEY (SEQUENCE_ID)

TABLE OBF_STORAGE
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)
```

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TABLE OCONUS_RUNWAY
  (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)
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TABLE OCONUS_TAXIWAY
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE REFUELING
  (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE REVETMENTS
  (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

 TABLE RUNWAY
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE SHED
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE TAXIWAY
   (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE WAREHOUSE
    (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)

TABLE WEATHER
    (PRIMARY KEY (OCCURRENCE, WRLD_AREA_CD, INS_NUM_ID)
```

APPENDIX C

DATABASE TABLE DESCRIPTIONS

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(XEROX THE ONE IN THE SUM ... IT IS ALREADY "C" AND NUMBERED).

APPENDIX D

SYSTEM ERROR/INFORMATIONAL MESSAGES

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NOTE: COPY OF THIS CAN BE OBTAINED FROM THE SOFTWARE USER MANUAL LOCATED AT C:\DOCUMENT\AIRFIELD.SUM